

IN THE CLAIMS:

This set of claims replaces all previous claim sets. Please amend the claims as follows:

1-42. (Cancelled)

43. (Currently Amended) A device for measuring electrical energy in an electric circuit, said device comprising:

at least one sensor coupled with said electric circuit and operative to sense at least one electrical parameter in said electric circuit and generate at least one analog signal indicative thereof;

at least one analog to digital converter coupled with said at least one sensor and operative to convert said at least one analog signal to at least one digital sample;

at least one time synchronization receiver operative to generate at least one time synchronization signal;

a local synchronization circuit coupled with a network and with said at least one time synchronization receiver and operative to receive at least one timing clock signal over the network and generate a synchronized timing clock signal by altering said at least one timing clock signal based on at least one of said at least one time synchronization signal, and

a processor coupled with said at least one analog to digital converter and said local synchronization circuit and operative to receive said synchronized timing clock signal.

44. (Previously Presented) The device of claim 43, wherein said processor comprises said local synchronization circuit.

45. (Previously Presented) The device of claim 43, wherein at least one of said at least one time synchronization receiver is further coupled with a communications network.

46. (Previously Presented) The device of claim 45, wherein at least one of said at least one time synchronization receiver is operative to transmit said at least one time synchronization signal onto said communications network.

47. (Previously Presented) The device of claim 43, wherein at least one of said at least one time synchronization signal comprises a network time signal.
48. (Previously Presented) The device of claim 43, wherein at least one of said at least one time synchronization signal comprises an external time synchronization signal generated externally to said device.
49. (Previously Presented) The device of claim 43, wherein at least one of said at least one time synchronization receiver comprises a GPS receiver operative to receive a GPS signal.
50. (Previously Presented) The device of claim 49, wherein said GPS receiver is operative to wirelessly receive said GPS signal.
51. (Previously Presented) The device of claim 43, wherein said device is an energy meter.
52. (Previously Presented) The device of claim 43, wherein said device is a phasor transducer.
53. (Currently Amended) The device of claim 43, wherein said processor is further operative to timestamp said at least one digital sample based on said synchronized timing clock signal.
54. (Currently Amended) A system for measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit, said system comprising:  
a digital network;  
at least one device coupled with said digital network, said at least one device comprising:  
at least one sensor coupled with said electric circuit and operative to sense at least one electrical parameter in said electric circuit and generate at least one analog signal indicative thereof;  
at least one analog to digital converter coupled with said at least one sensor and operative to convert said at least one analog signal to at least one digital

sample;

at least one time synchronization receiver operative to generate at least one time synchronization signal;

a local synchronization circuit coupled with said at least one time synchronization receiver and operative to receive at least one timing clock signal and generate a synchronized timing clock signal by altering said at least one timing clock signal from the digital network based on at least one of said at least one time synchronization signal; and

a processor coupled with said at least one analog to digital converter and said local synchronization circuit and operative to receive said synchronized timing clock signal.

55. (Previously Presented) The system of claim 54, wherein said processor is further operative to timestamp said at least one digital sample based on said synchronized timing clock signal.
56. (Previously Presented) The system of claim 54, wherein said processor is further operative to transmit at least one of said synchronized timing clock signal, said at least one time synchronization signal, or a combination thereof onto said digital network.
57. (Previously Presented) The system of claim 55, wherein said processor is operative to perform a function on said timestamped at least one digital sample.
58. (Previously Presented) The system of claim 54, wherein said at least one time synchronization receiver comprises a GPS receiver operative to receive a GPS signal.
59. (Previously Presented) The system of claim 58, wherein said GPS receiver is operative to wirelessly receive said GPS signal.
60. (Previously Presented) A method for measuring electrical energy in an electric circuit, said method comprising:
- (a) sensing at least one electrical parameter in said electric circuit and generating at least one analog signal indicative thereof;
  - (b) converting said at least one analog signal to at least one digital sample;

(c) generating at least one time synchronization signal from at least one time synchronization receiver;

(d) generating a synchronized timing clock signal by altering a timing clock signal of said at least one digital sample based on at least one of said at least one time synchronization signal.

61. (Currently Amended) The method of claim 60 further comprising timestamping said at least one digital sample based on at least one of said at least one time synchronization signal, said synchronized timing clock signal, or a combination thereof.
62. (Previously Presented) The method of claim 60 further comprising transmitting at least one of said at least one time synchronization signal onto a communications network.
63. (Previously Presented) The method of claim 60 wherein at least one of said at least one time synchronization receiver is an external time synchronization device.
64. (Currently Amended) A device for measuring electrical energy in an electric circuit, said device comprising:
- sensing means for sensing at least one electrical parameter in said electric circuit and generate at least one analog signal indicative thereof;
  - converting means for converting said at least one analog signal to at least one digital sample;
  - generating means for generating at least one time synchronization signal from at least one time synchronization receiver;
  - synchronization means for generating a synchronized timing clock signal based on at least one of said at least one time synchronization signal; and
  - processing means for altering a timing clock signal from a network based on at least one of said at least one time synchronization signal.